SEQUENCE LISTING

<110> Bandman, Olga
Tang, Y. Tom
Hillman, Jennifer L.
Yue, Henry
Guegler, Karl J.
Corley, Neil C.
Gorgone, Gina
Azimzai, Yalda
Lu, Aina

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<141> Herewith

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Ser Ser Ser Gly Cys His Pro Gly Gly Ala Arg Ala Gly Pro Ser
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Pro Ala Ser Ser Ser Pro Ala Pro Gly Gly Gly Arg Ser Leu Ser
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Ala Gly Ser Gln Thr Ser Gly Phe Ser Gly Ser Leu Phe Ser Pro
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Ala Ser Cys Ser Ile Leu Ser Gly Ser Ser Asn Gln Arg Glu Thr
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Gly Gly Leu Leu Ser Pro Ser Thr Pro Phe Gly Ala Ser Asn Leu
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125 130 135
Lys Ile Ala Asp Leu Gly Asn Ala Cys Trp Val His Lys His Phe
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Thr Glu Asp Ile Gln Thr Arg Gln Tyr Arg Ala Val Glu Val Leu
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Ile Gly Ala Glu Tyr Gly Pro Pro Ala Asp Ile Trp Ser Thr Ala
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Cys Met Ala Phe Glu Leu Ala Thr Gly Asp Tyr Leu Phe Glu Pro
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His Ser Gly Glu Asp Tyr Ser Arg Asp Glu Asp His Ile Ala His
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Ile Val Glu Leu Leu Gly Asp Ile Pro Pro Ala Phe Ala Leu Ser
215 220 225
Gly Arg Tyr Ser Arg Glu Phe Phe Asn Arg Arg Gly Glu Leu Arg
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His Ile His Asn Leu Lys His Trp Gly Leu Tyr Glu Val Leu Met
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Glu Lys Tyr Glu Trp Pro Leu Glu Gln Ala Thr Gln Phe Ser Ala
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Phe Leu Leu Pro Met Asn Glu Tyr Ile Pro Glu Lys Arg Ala Ser
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Lys Val Phe Lys Lys Leu Gln Ala Gly Ser Ile Ala Ile Val Arg
50 55 60
Gln Thr Phe Asn Lys Glu Ile Lys Thr Met Lys Lys Phe Glu Ser
65 70 75
Pro Asn Ile Leu Arg Ile Phe Gly Ile Cys Ile Asp Glu Thr Val
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Thr Pro Pro Gln Phe Ser Ile Val Met Glu Tyr Cys Glu Leu Gly
95 100 105
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110 115 120
Lys Arg Met Val Leu Val Leu Gly Ala Ala Arg Gly Leu Tyr Arg
125 130 135
Leu His His Ser Glu Ala Pro Glu Leu His Gly Lys Ile Arg Ser
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Ser Asn Phe Leu Val Thr Gln Gly Tyr Gln Val Lys Leu Ala Gly
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Arg Glu Lys Thr Asp Arg Val Lys Ser Thr Ala Tyr Leu Ser Pro
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Gln Glu Leu Glu Asp Val Phe Tyr Gln Tyr Asp Val Lys Ser Glu
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215 220 225
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230 235 240
Ala Val Lys Arg Gln Gln Glu Pro Leu Gly Glu Asp Cys Pro Ser
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Asp Pro Leu Val Thr Tyr Glu Gly Ser Asn Pro Pro Ala Ser Pro
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Leu Gln Asp Asn Leu Val Ile Ala Leu His Ser Tyr Glu Pro Ser
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His Asp Gly Asp Leu Gly Phe Glu Lys Gly Glu Gln Leu Arg Ile
                 80                  85                  90
Leu Glu Gln Ser Gly Glu Trp Trp Lys Ala Gln Ser Leu Thr Thr
                 95                 100                 105
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Arg Leu Val Arg Leu Tyr Ala Val Val Thr Gln Glu Pro Ile Tyr
                140                 145                 150
Ile Ile Thr Glu Tyr Met Glu Asn Gly Ser Leu Val Asp Phe Leu
                155                 160                 165
Lys Thr Pro Ser Gly Ile Lys Leu Thr Ile Asn Lys Leu Leu Asp
                170                 175                 180
Met Ala Ala Gln Ile Ala Glu Gly Met Ala Phe Ile Glu Glu Arg
                185                 190                 195
Asn Tyr Ile His Arg Asp Leu Arg Ala Ala Asn Ile Leu Val Ser
                200                 205                 210
Asp Thr Leu Ser Cys Lys Ile Ala Asp Phe Gly Leu Ala Arg Leu
                215                 220                 225
Ile Glu Asp Asn Glu Tyr Thr Ala Arg Glu Gly Ala Lys Phe Pro
                230                 235                 240
Ile Lys Trp Thr Ala Pro Glu Ala Ile Asn Tyr Gly Thr Phe Thr
                245                 250                 255
Ile Lys Ser Asp Val Trp Ser Phe Gly Ile Leu Leu Thr Glu Ile
                260                 265                 270
Val Thr His Gly Arg Ile Pro Tyr Pro Gly Met Thr Asn Pro Glu
                275                 280                 285

Val Ile Gln Asn Leu Glu Arg Gly Tyr Arg Met Val Arg Pro Asp
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Asn Cys Pro Glu Glu Leu Tyr Gln Leu Met Arg Leu Cys Trp Lys
                305                 310                 315
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35 40 45
Leu Glu Ala Cys Ser Asn Glu Met Val Thr Phe Leu Gln Gly Glu
50 55 60
Leu His Val Ser Lys Leu Phe Asn His Pro Asn Ile Val Pro Tyr
65 70 75
Arg Ala Thr Phe Ile Ala Asp Asn Glu Leu Trp Val Val Thr Ser
80 85 90
Phe Met Ala Tyr Gly Ser Ala Lys Asp Leu Ile Cys Thr His Phe
95 100 105
Met Asp Gly Met Asn Glu Leu Ala Ile Ala Tyr Ile Leu Gln Gly
110 115 120
Val Leu Lys Ala Leu Asp Tyr Ile His His Met Gly Tyr Val His
125 130 135
Arg Ser Val Lys Ala Ser His Ile Leu Ile Ser Val Asp Gly Lys
140 145 150
Val Tyr Leu Ser Gly Leu Arg Thr Thr Leu Ser Met Ile Ser His
155 160 165
Gly Gln Arg Gln Arg Val Val His Asp Phe Pro Lys Tyr Ser Val
170 175 180
Lys Val Leu Pro Trp Leu Ser Pro Glu Val Leu Gln Gln Asn Leu
185 190 195
Gln Gly Tyr Asp Ala Lys Ser Asp Ile Tyr Ser Val Gly Ile Thr
200 205 210
Ala Cys Glu Leu Ala Asn Gly His Val Pro Phe Lys Asp Met Pro
215 220 225
Ala Thr Gln Met Leu Leu Glu Lys Leu Asn Gly Thr Val Pro Cys
230 235 240
Leu Leu Asp Thr Ser Thr Ile Pro Ala Glu Glu Leu Thr Met Ser
245 250 255
Pro Ser Arg Ser Val Ala Asn Ser Gly Leu Ser Asp Ser Leu Thr
260 265 270
Thr Ser Thr Pro Arg Pro Ser Asn Gly Asp Ser Pro Ser His Pro
275 280 285
Tyr His Arg Thr Phe Ser Pro His Phe His His Phe Val Glu Gln
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Pro Gly Leu Arg Glu Ser Arg Gly Cys Ser Gly Gly
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35 40 45
Glu Glu Ser Arg Arg Glu Val Ala Val Leu Ala Asn Met Lys His
50 55 60
Pro Asn Ile Val Gln Tyr Arg Glu Ser Phe Glu Gly Ile Leu Asp
65 70 75
Trp Phe Val Gln Ile Cys Leu Ala Leu Lys His Val His Asp Arg
80 85 90
Lys Ile Leu His Arg Asp Ile Lys Ser Gln Asn Ile Phe Leu Thr
95 100 105
Lys Asp Gly Thr Val Gln Leu Gly Asp Phe Gly Ile Ala Arg Val
110 115 120
Leu Asn Ser Thr Val Glu Leu Ala Arg Thr Cys Ile Gly Thr Pro
125 130 135
Tyr Tyr Leu Ser Pro Glu Ile Cys Glu Asn Lys Pro Tyr Asn Asn
140 145 150
Lys Ser Asp Ile Trp Ala Leu Gly Cys Val Leu Tyr Glu Leu Cys
155 160 165
Thr Leu Lys His Ala Phe Glu Ala Gly Ser Met Lys Asn Leu Val
170 175 180
Leu Lys Ile Ile Ser Gly Ser Phe Pro Pro Val Ser Leu His Tyr
185 190 195
Ser Tyr Asp Leu Arg Ser Leu Val Ser Gln Leu Phe Lys Arg Asn
200 205 210
Pro Arg Asp Arg Pro Ser Val Asn Ser Ile Leu Glu Lys Gly Phe
215 220 225
Ile Ala Lys Arg Ile Glu Lys Phe Leu Ser Pro Gln Leu Ile Ala
230 235 240
Glu Glu Phe Cys Leu Lys Thr Phe Ser Lys Phe Gly Ser Gln Pro
245 250 255
Ile Pro Ala Lys Arg Pro Ala Ser Gly Gln Asn Ser Ile Ser Val
260 265 270
Met Pro Ala Gln Lys Ile Thr Lys Pro Ala Ala Lys Tyr Gly Ile
275 280 285
Pro Leu Ala Tyr Lys Lys Tyr Gly Asp Lys Lys Leu His Glu Lys
290 295 300
Lys Pro Leu Gln Lys His Lys Gln Ala His Gln Thr Pro Glu Lys
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35 40 45
Gln Gly Ser Gly Ser Arg Pro Pro Thr Pro Lys Ser Ser Pro Gln
50 55 60
Lys Thr Arg Lys Ser Pro Gln Val Thr Arg Gly Ser Pro Gln Lys
65 70 75
Thr Ser Cys Ser Pro Gln Lys Thr Arg Gln Ser Pro Gln Thr Leu
80 85 90
Lys Arg Ser Arg Val Thr Thr Ser Leu Glu Ala Leu Pro Thr Gly
95 100 105
Thr Val Leu Thr Asp Lys Ser Gly Arg Gln Trp Lys Leu Lys Ser
110 115 120
Phe Gln Thr Arg Asp Asn Gln Gly Ile Leu Tyr Glu Ala Ala Pro
125 130 135
Thr Ser Thr Leu Thr Cys Asp Ser Gly Pro Gln Lys Gln Lys Phe
140 145 150
Ser Leu Lys Leu Asp Ala Lys Asp Gly Arg Leu Phe Asn Glu Gln
155 160 165
Asn Phe Phe Gln Arg Ala Ala Lys Pro Leu Gln Val Asn Lys Trp
170 175 180
Lys Lys Leu Tyr Ser Thr Pro Leu Leu Ala Ile Pro Thr Cys Met
185 190 195
Gly Phe Gly Val His Gln Asp Lys Tyr Arg Phe Leu Val Leu Pro
200 205 210
Ser Leu Gly Arg Ser Leu Gln Ser Ala Leu Asp Val Ser Pro Lys
215 220 225
His Val Leu Ser Glu Arg Ser Val Leu Gln Val Ala Cys Arg Leu
230 235 240
Leu Asp Ala Leu Glu Phe Leu His Glu Asn Glu Tyr Val His Gly
245 250 255
Asn Val Thr Ala Glu Asn Ile Phe Val Asp Pro Glu Asp Gln Ser
260 265 270
Gln Val Thr Leu Ala Gly Tyr Gly Phe Ala Phe Arg Tyr Cys Pro
275 280 285
Ser Gly Lys His Val Ala Tyr Val Glu Gly Ser Arg Ser Pro His
290 295 300
Glu Gly Asp Leu Glu Phe Ile Ser Met Asp Leu His Lys Gly Cys
305 310 315
Gly Pro Ser Arg Arg Ser Asp Leu Gln Ser Leu Gly Tyr Cys Met
320 325 330
Leu Lys Trp Leu Tyr Gly Phe Leu Pro Trp Thr Asn Cys Leu Pro
335 340 345
Asn Thr Glu Asp Ile Met Lys Gln Lys Gln Lys Phe Val Asp Lys
350 355 360
Pro Gly Pro Phe Val Gly Pro Cys Gly His Trp Ile Arg Pro Ser
365 370 375
Glu Thr Leu Gln Lys Tyr Leu Lys Val Val Met Ala Leu Thr Tyr
380 385 390
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35 40 45
Leu Pro Ala His Pro Ser Glu Leu Pro Ile Pro Gln Arg Leu Gly
50 55 60
Gly Pro Ala Pro Lys Ala His Pro Gly Pro Pro His Ile His Asp
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35 40 45
Cys Leu Asp Ala Cys Val Gln Val Asn Met Thr Thr Asp Leu Glu
50 55 60
Gly Ser Asp Met Leu Val Glu Lys Ala Asp Arg Arg Glu Phe Ile
65 70 75
Asp Leu Leu Lys Lys Met Leu Thr Ile Asp Ala Asp Lys Arg Ile
80 85 90
Thr Pro Ile Glu Thr Leu Asn His Pro Phe Val Thr Met Thr His
95 100 105
Leu Leu Asp Phe Pro His Ser Thr His Val Lys Ser Cys Phe Gln
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<220> -
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<223> 2605059

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